

**WHAT IS CLAIMED IS:**

1. An implantable device implantable in an artery of a patient at a bifurcation thereof into a first branch supplying blood to a vital region having a high sensitivity to emboli in the blood, and a second branch supplying blood to a less vital region having a lower sensitivity to emboli in the blood;

    said implantable device being of tubular configuration initially of a small diameter for facilitating its introduction into and deployment through the artery to said bifurcation, and expandable to a larger diameter for implantation in the artery and said bifurcation;

    said implantable device comprising: a base element configured and dimensioned for anchoring said implantable device in the artery at said bifurcation; and a deflector element configured and dimensioned for covering the inlet of said first branch at the bifurcation when said implantable device is implanted in said artery;

    said deflector element being formed with openings therethrough of a size and configuration to deflect emboli in the blood to said second branch without blocking blood flow through said second branch or through said first branch;

    said base element including an anchoring portion engageable with the inner surface of the artery for anchoring the implantable device therein, and a supporting portion engageable with a surface of said deflector element for fixing said deflector element over said inlet of said first branch at said bifurcation when the implantable device is anchored in said artery;

    said deflector element being attached to said supporting portion of the base element to produce a composite construction.

2. The implantable device according to Claim 1, wherein said base element is a coil having two opposing ends which overlap in its initial small diameter condition.
3. The implantable device according to Claim 2, wherein said coil is a perforated sheet coiled into said tubular configuration.
4. The implantable device according to Claim 1, wherein said base element is a tube in its initial small-diameter condition expandable to said larger-diameter condition.
5. The implantable device according to Claim 1, wherein said supporting portion of the base element includes a plurality of spaced parallel filaments extending longitudinally of said base element.
6. The implantable device according to Claim 5, wherein said supporting portion of the base element further includes a pair of additional filaments extending circumferentially of said base element on opposite ends of said supporting portion.
7. The implantable device according to Claim 5, wherein said deflector element is supported on, and is draped between, said plurality of spaced parallel filaments of the supporting portion of the base element in the small-diameter condition of the implantable device.
8. The implantable device according to Claim 5, wherein said deflector element is supported on, and is stitched to, said plurality of spaced parallel filaments of the supporting portion of the base element in the small-diameter condition of the implantable device.
9. The implantable device according to Claim 5, wherein said deflector element is supported on, and is wrapped around, said plurality of spaced parallel filaments of the

supporting portion of the base element in the small-diameter condition of the implantable device.

10. The implantable device according to Claim 1, wherein said deflector element includes a finely-meshed area circumscribed by an unmeshed frame.

11. The implantable device according to Claim 1, wherein said base element and said deflector element are both of a meshed structure in which the meshed structure of the base element has a larger porosity index than that of the deflector element.

12. The implantable device according to Claim 1, wherein said implantable device is configured and dimensioned for implantation in the patient's common carotid artery at its bifurcation with the internal carotid artery constituting said first branch, and the external carotid artery constituting said second branch.

13. The implantable device according to Claim 1, wherein said openings in the deflector element are within the range of 100  $\mu\text{m}$  to 700  $\mu\text{m}$ .

14. The implantable device according to Claim 1, wherein said openings in the deflector element are within the range of 100  $\mu\text{m}$  to 400  $\mu\text{m}$ .

15. The implantable device according to Claim 1, wherein said base element is constituted of wire of a diameter within the range of 100  $\mu\text{m}$  to 1500  $\mu\text{m}$ .

16. The implantable device according to Claim 1, wherein said base element is constituted of wire of a diameter within the range of 100  $\mu\text{m}$  to 200  $\mu\text{m}$ .

17. The implantable device according to claim 15 wherein said deflector element is constituted of wire of a diameter within the range of 20  $\mu\text{m}$  to 75  $\mu\text{m}$ .

18. The implantable device according to claim 15 wherein said deflector element is constituted of wire of a diameter within the range of 20  $\mu\text{m}$  to 40  $\mu\text{m}$ .

19. A method of reducing the risk of stroke in a patient, comprising:

providing an implantable device according to Claim 1 configured and dimensioned for implantation in the patient's common carotid artery at its bifurcation with the internal carotid artery constituting said first branch, and the external carotid artery constituting said second branch;

and implanting said implantable device in the patient's common carotid artery at said bifurcation.

20. A method for assembling an implantable device implantable in an artery of an individual at a bifurcation thereof into a first branch supplying blood to a vital region having a high sensitivity to emboli in the blood, and a second branch supplying blood to a less vital region having a lower sensitivity to emboli in the blood:

selecting a base element of tubular configuration, said base element having states of different diameter, a first state being a small diameter for facilitating its introduction into and deployment through the artery to the bifurcation, and expandable to a second state being a larger diameter for implantation in the artery and said bifurcation;

selecting a separate tubular deflector element comprised of elastic elements, said tubular deflector element being configured and dimensioned to cover the inlet of the first branch at said bifurcation when the implantable device is implanted in said artery, the unstretched diameter of said tubular deflector element being smaller than said diameter of said second state of said base element;

inserting said base element in a contracted condition into said tubular deflector element;

contracting said base element and said tubular deflector element to said first state thus facilitating its introduction into and deployment through the patient body to said bifurcation; and

expanding said base element to said second state thus implantating said implantable device in the artery at said bifurcation and securing said separate tubular deflector element to said base element.